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10/611,434

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EXAMINER

CHOI, PETER Y

ART UNIT

PAPER NUMBER

1794

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/611,434	Applicant(s) MCCULLOCH ET AL.	
	Examiner PETER Y. CHOI	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 15, 17, 18, 22, 24 and 32-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 19-21, 23 and 25-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of Group I, Species Group I Species I, Species Group II Species I, Species Group III Species II, Species Group IV Species II, Species Group V Species I, Species Group VI Species I, and Species Group VII Species I in the reply filed on May 11, 2009, is acknowledged. It should be noted that Species Group VII is rejoined with the currently examined claims and the restriction for Species Group VII is withdrawn. The traversal is on the ground(s) that a search of the art for one group of claims will necessarily include a search of the art for the other group of claims, and that the burden on Examiner is less than the burden on the Applicants to prosecute more than one application. This is not found persuasive because Inventions I and II are distinct since the product of claims 1-31 can be made by a materially different process, as set forth in the Restriction Requirement of April 14, 2009. Additionally, the Species Groups are mutually exclusive and not obvious variants of each other and Applicants have not identified the Species Groups as obvious variants. Claims 15, 17, 18, 22, 24, and 32-57 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and nonelected species, there being no allowable generic or linking claim.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The information disclosure statement filed July 2, 2003, fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the Information Disclosure Statement is neither signed nor does the Information Disclosure Statement provide a Registration Number

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for the Attorney for Applicants. Additionally, it should be noted that the Inventor for Document Number 4,828,897 is not Staneius. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicants are advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14, 16, 19-21, 23, 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,828,897 to Staneluis.

Regarding claims 1-14, 16, 19-21, 23, 25, 26, and 28, Stanelius teaches a composite structure comprising a core portion having a pair of generally opposed surfaces, a first fibrous layer disposed on a first surface of the core portion, the first fibrous layer comprising a plurality of fibers disposed substantially parallel to the first surface, a second fibrous layer disposed on a second surface of the core portion, the second fibrous layer comprising a plurality of fibers disposed substantially parallel to the second surface, and a first polymer layer disposed over the

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first fibrous layer and a second polymer layer disposed over the second fibrous layer, wherein the first fibrous layer is partially embedded in both the core portion and the first polymer layer, and the second fibrous layer is partially embedded in the core portion and the second polymer layer (column 1 line 5 to column 2 line 41, column 2 line 66 to column 4 line 2, column 5 line 10 to column 6 line 62, column 9 lines 14-29, column 13 lines 6-35, Figures 2 and 4, claims 1-8).

Regarding claim 2, the first polymer layer and the first surface of the core portion are in contact with one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, Figure 2).

Regarding claim 3, the second polymer layer and the second surface of the core portion are in contact with one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, Figure 2).

Regarding claim 4, the first polymer layer and the first surface of the core portion are in contact with one another, and the second polymer layer and the second surface of the core portion are in contact with one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, Figure 2).

Regarding claim 5, the first polymer layer and the first surface of the core portion are chemically bonded to one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, column 9 lines 30-46, Figure 2, claim 1).

Regarding claim 6, the second polymer layer and the second surface of the core portion are chemically bonded to one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, column 9 lines 30-46, Figure 2, claim 1).

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Regarding claim 7, the first polymer layer and the first surface of the core portion are chemically bonded to one another, and the second polymer layer and the second surface of the core portion are chemically bonded to one another (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, column 9 lines 30-46, Figure 2, claim 1).

Regarding claim 8, the first surface and the second surface are substantially parallel to one another (column 1 line 63 to column 2 line 41, Figure 2).

Regarding claim 9, the first polymer coating and the second polymer coating combine to substantially completely cover the composite structure (column 1 line 63 to column 2 line 41, column 5 line 10 to column 6 line 62, column 9 lines 30-46, Figures 2 and 4).

Regarding claim 10, the core portion comprises a cellular material (column 1 line 63 to column 2 line 41, column 13 lines 6-59).

Regarding claim 11, the core portion comprises a polymer foam (column 1 line 63 to column 2 line 41, column 13 lines 6-59).

Regarding claim 12, the core portion comprises an isocyanate-based polymer foam (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 13 lines 6-59, Table 2).

Regarding claim 13, the core portion comprises a polyurethane foam (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 13 lines 6-59, Table 2).

Regarding claim 14, the core portion comprises a molded polyurethane foam (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 12 lines 11-17, column 13 lines 6-59, Table 2).

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Regarding claim 16, the first fibrous layer and the second fibrous layer are the same (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 5 lines 23-62, column 13 lines 6-59).

Regarding claim 19, one or both of the first fibrous layer and the second fibrous layer are non-woven (column 1 line 63 to column 2 line 41, column 9 lines 14-46). It should be noted that the prior art does not teach that the first fibrous layer and the second fibrous layer are woven.

Regarding claim 20, each of the first fibrous layer and the second fibrous layer contains glass fibers (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 9 lines 14-46).

Regarding claim 21, each of the first fibrous layer and the second fibrous layer comprises a fibreglass mat (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 9 lines 14-46).

Regarding claim 23, the first polymer layer and the second polymer layer are the same (column 1 line 63 to column 2 line 41, column 3 line 59 to column 4 line 2, column 9 lines 14-46, Table 1).

Regarding claim 25, the first polymer layer and the second polymer layer are non-cellular (column 1 line 63 to column 2 line 41, column 3 line 36 to column 4 line 2). It should be noted that the prior art does not teach that the first polymer layer and the second polymer layer are cellular.

Regarding claim 26, the first polymer layer and the second polymer layer each comprise an isocyanate-based polymer (column 3 line 36 to column 4 line 2, Table 1).

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Regarding claim 28, the first polymer layer and the second polymer layer each comprise polyurethane (column 3 line 36 to column 4 line 2, Table 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-14, 16, 19-21, 23, 25, 26, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanelius in view of USPN 6,627,018 to O'Neill.

Regarding claims 1-14, 16, 19-21, 23, 25, 26, and 28-31, the prior art appears to teach the claimed first and second fibrous layers, each of which comprise a plurality of fibers disposed substantially to the first and second surfaces respectively. Additionally, O'Neill teaches a substantially similar reinforced composite, comprising a isocyanate-based foam core material and first and second unidirectional and/or bi-directional fibrous layers, and polymeric sheets applied on the surfaces of each of the fibrous layers (O'Neill, column 1 line 7 to column 4 line 32, column 6 lines 13-24, column 7 line 6 to column 8 line 10, column 9 line 35 to column 10 line 15, column 10 line 44 to column 11 line 13, column 12 lines 6-17, column 12 line 62 to column 13 line 11, column 14 line 16 to column 16 line 57, column 17 lines 8-19, column 18 line 24 to column 19 line 21, column 23 lines 55-62, column 30 lines 24-62). O'Neill teaches that unidirectional and bi-directional fiber structures predictably enhance the strength of the composite material in the directions of the fibers, and can provide increased stiffness in

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comparison to a random fiber mat, which typically provides greater resistance to deformation and crack propagation than does a directional fiber (Id., column 15 lines 12-67). It would have been obvious to one of ordinary skill in the reinforced composite art at the time the invention was made to form the reinforced composite of the prior art, wherein the fibrous layers comprise unidirectional or bi-directional fibrous layers as taught by O'Neill, motivated by the desire of forming a conventional reinforced composite with predictably enhanced strength and stiffness in the directions of the fibers.

Regarding claims 29-31, the prior art does not appear to teach a vehicular body panel, door panel, or flat bed panel comprising the composite structure as claimed. Since the prior art is silent as to the intended use of the composite, it would have been necessary and therefore obvious to look to the prior art for conventional uses for reinforced composites. O'Neill provides this conventional teaching, showing a substantially similar reinforced composite, comprising a isocyanate-based foam core material and first and second unidirectional and/or bi-directional fibrous layers, and polymeric sheets applied on the surfaces of each of the fibrous layers (O'Neill, column 1 line 7 to column 4 line 32, column 6 lines 13-24, column 7 line 6 to column 8 line 10, column 9 line 35 to column 10 line 15, column 10 line 44 to column 11 line 13, column 12 lines 6-17, column 12 line 62 to column 13 line 11, column 14 line 16 to column 16 line 57, column 17 lines 8-19, column 18 line 24 to column 19 line 21, column 23 lines 55-62, column 30 lines 24-62). O'Neill teaches that unidirectional and bi-directional fiber structures predictably enhance the strength of the composite material in the directions of the fibers, and can provide increased stiffness in comparison to a random fiber mat, which typically provides greater resistance to deformation and crack propagation than does a directional fiber (Id., column 15

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lines 12-67). O'Neill teaches that the directional fibers may be selectively applied to reduce the coefficient of thermal expansion of the composite in the direction of the fibers, which is particularly advantageous when using the composite in automotive body panels or large automotive components, including hard tops, doors, or other parts or components of vehicles (Id., column 12 lines 6-17, column 15 lines 12-67). It would have been obvious to one of ordinary skill in the reinforced composite art at the time the invention was made to form the reinforced composite of the prior art, wherein the reinforced composite is used in vehicle panels as taught by O'Neill, motivated by the desire of forming a conventional reinforced composite suitable with a reduced coefficient of thermal expansion, which is predictably advantageous when using the composite in automotive body panels or large automotive components, including hard tops, doors, or other parts or components of vehicles.

Additionally, it should be noted that Applicants do not recite a specific structure associated with a vehicular flat bed panel. Therefore, since the prior art teaches a substantially similar structure and composition as the claimed invention, and since the prior art may be used in various vehicle panels, it would have additionally been obvious to one of ordinary skill in the reinforced composite art at the time the invention was made to form a vehicular flat bed panel with the composite of the prior art, as the vehicular flat bed panels would similarly predictably benefit from being made with a composite having enhanced strength and stiffness, and a reduced coefficient of thermal expansion.

In the event it is shown that the prior art does not disclose the claimed invention with sufficient specificity, the invention is obvious because the prior art discloses the claimed constituents and discloses that they may be used in combination.

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7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stanelius, as applied to claims 1-14, 16, 19-21, 23, 25, 26, and 28 above, in view of USPN 3,428,592 to Youker.

Regarding claim 27, the prior art does not appear to teach that the first polymer layer and the second polymer layer each comprise polyurea. However, the prior art teaches that the coating is based on isocyanate. Youker teaches that it was known in the laminating art to impregnate fibers of glass mat with a composition based on isocyanate, wherein the composition comprises polyurea (Youker, column 1 line 12 to column 3 line 15, column 5 line 5 to column 7 line 3, column 14 lines 30-55, Example 12). Youker teaches that the composition may be useful as adhesives for laminating sheet, as the strength of the polyureas renders them useful in producing structural members for a variety of purposes, including for non-woven fabrics. Youker teaches that the compositions can be used for stiffening and reinforcing. It would have been obvious to one of ordinary skill in the laminating art at the time the invention was made to form the laminate of the prior art, wherein the first and second isocyanate-based polymers comprise the polyurea composition as taught by Youker, motivated by the desire of forming a conventional laminate with a polymer composition known in the art as providing strength, stiffening and reinforcing characteristics to glass fiber mats.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stanelius in view of O'Neill, as applied to claims 1-14, 16, 19-21, 23, 25, 26, and 28-31 above, and further in view of Youker.

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Regarding claim 27, the prior art does not appear to teach that the first polymer layer and the second polymer layer each comprise polyurea. However, the prior art teaches that the coating is based on isocyanate. Youker teaches that it was known in the laminating art to impregnate fibers of glass mat with a composition based on isocyanate, wherein the composition comprises polyurea (Youker, column 1 line 12 to column 3 line 15, column 5 line 5 to column 7 line 3, column 14 lines 30-55, Example 12). Youker teaches that the composition may be useful as adhesives for laminating sheet, as the strength of the polyureas renders them useful in producing structural members for a variety of purposes, including for non-woven fabrics. Youker teaches that the compositions can be used for stiffening and reinforcing. It would have been obvious to one of ordinary skill in the laminating art at the time the invention was made to form the laminate of the prior art, wherein the first and second isocyanate-based polymers comprise the polyurea composition as taught by Youker, motivated by the desire of forming a conventional laminate with a polymer composition known in the art as providing strength, stiffening and reinforcing characteristics to glass fiber mats.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER Y. CHOI whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter Y Choi/
Examiner, Art Unit 1794

/Andrew T Piziali/
Primary Examiner, Art Unit 1794